

# Petr Stepanov

Software developer. User interface designer.

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Ph.D. graduate in physics with focus in GUI **desktop software development** for data analysis. More than 5 years in website and **web applications development**. Strong **user interface (UI)** and **user experience (UX)** design skills.

## Summary of Qualifications

- Strong Object Oriented Programming (OOP) and debugging skills (C++, Java, Python). Knowledge of modern IDEs (Eclipse, XCode, VSCode).
- 3+ years in building responsive web apps with modular JavaScript, HTML and CSS. Hands-on experience with Angular and React frameworks.
- 5+ years of user interfaces (UI) with with Model-View patterns (MVC, MVP). Knowledge of Qt framework.
- 6+ years of UI and UX wireframing and interactive prototyping skills (Figma, Sketch, Adobe) for web and mobile allipcations.

## Work Experience

### C++ Software Developer

[Thomas Jefferson National Laboratory \(JLab\)](#), Newport News, VA, USA.

Jul 2020 - Current

- Applied CERN ROOT framework (C++) to perform statistical analysis of a significant amount (over 100 GB) of the raw experimental data of the [Kaon LT](#) experiment at JLab. [Link to GitHub](#).
- Utilized SLURM environment on [JLab supercomputer environment](#) to run resourceful particle simulations on multiple computing nodes at the same time. This decreased the wall computation time by more than 10 times.
- Proposed and implemented RAMDisk functionality on the development environment. This lead to an over 60% increase in source code indexing time.

### Software Developer • Postdoctoral Researcher

[Catholic University of America \(CUA\)](#), Washington, DC, USA.

Jul 2020 - Current

- Applied Machine Learning (ML) TMVA framework to perform binary classification of thousands of signals from a data acquisition (DAQ) setup. [Link to GitHub](#).
- Developed a computer simulation based on the Geant4 framework (C++, CMake, Eclipse IDE, gdb) to study optical properties of a novel scintillation material to be used in the EIC detector system. [Link to GitHub](#).
  - Program accounts on scintillation material properties - composition, transmittance, luminescence.
  - Code reconstructs detector responce (PMT or MPPC) depending on the quantum efficiency curve.
  - Visualization of optical photon trajectories with respect to their energy or creator process.
- Enhanced debugging of the core library source code lead to opening more than [10 bug reports](#) on the ROOT (C++) forum.

### Software Developer • Research Assistant

[Bowling Green State University \(BGSU\)](#), Bowling Green, OH, USA.

Aug 2014 - May 2020

- Wrote three desktop GUI programs for spectra fitting and interpretation (C++, CMake, ROOT, Qt, Java)
  - GitHub repositories contain over 10k lines of code in total: [TLIST Processor](#), [SW Calculator](#), [RooPositron](#).
  - Extended default ROOT GUI library (Qt-based) to support the MVP design pattern.
- Developed static website (Hexo, Gulp, Bootstrap) and visual identity for the [SelimLab](#) research group. Website has a 99% Google performance rank and features 700 ms time to interactive metrics.
- Maintained local Apache HTTP server [physics.bgsu.edu](http://physics.bgsu.edu) hosting over 10 websites at the BGSU.
- Created website for the [ICPA-18](#) international conference with registration (over 150 users) and payment system workflow (WordPress, PHP, Recurly.js), and [landing pages](#) for events.

### Frontend Developer, UI/UX Designer • Freelance

Sep 2012 - Current

- Designed and built online e-commerce store [Sticker Store LLC](#) with static website generator (Figma, Hexo, Snipcart, Bootstrap, SASS, Express.JS, EJS, Node.js).
  - Improved the Google PageSpeed Insights metrics (CLS, LCP) up to 97%.
  - Created a recursive script to export over 300 products from YAML file to Google Merchant.
  - Optimized SEO. Project reached over 1400 organic monthly users.
- Made iOS application (Swift, UIKit, storyboards) for the [We.Team](#) messenger (more than 3k monthly downloads in AppStore). Participated in cloud-based messenger development with enhanced file sharing capabilities (HTML, React JS, SASS).
- Migrated the landing page for [Sweetbridge](#) company from WordPress to Jekyll static site generator (Ruby, CSS). This resulted in a 70% improvement in the page load time.
- Developed the front-end part (Angular.js, HTML, LESS) for [Lili Social](#) network.
  - Assisted with iOS mobile application (Ionic).
  - Enabled SEO crawling of over 1000 Angular.js pages with Google bot.
- Web design.
  - Designed logos, UI/UX prototypes (Figma, Sketch, Illustrator) and branding identity for over [10 different companies](#).
  - Converted numerous design assets and mockups into responsive HTML and CSS.
  - Mocked up and integrated dozens of cross-browser responsive email templates.

## Computer Science Skills

- **Essentials.** Git, SVN, SSH, Linux, and Terminal usage. BASH scripting. IDEs: Eclipse, Xcode, Visual Studio Code (VS Code).
- **Project management.** JIRA, Trello, GitHub, GitLab.
- **Desktop app development.** C/C++, GNU make, CMake. Frameworks: Qt, CERN ROOT, Geant4. Java and Swing. Python.
- **Frontend:** HTML, CSS (LESS and SASS), Bootstrap, responsive web design, JavaScript and jQuery, npm, gulp, AngularJS, React.js. Google Web Toolkit. PHP and WordPress themes development.
- **Backend.** Node.js, Express.JS (EJS), Java.
- **UI/UX design.** Figma, Sketch, InVision Studio, Adobe XD, Adobe Photoshop, Adobe Illustrator, Inkscape, Blasamiq, Blender.
- **Apple iOS.** Fundamental Swift skills. User interface development with UIKit and storyboards.

## Education

**Bowling Green State University (BGSU) • Ohio, USA**

**Aug 2014 - May 2020**

Ph.D. in Photochemical Sciences • GPA 3.423. Novel developments in positron annihilation spectroscopy techniques—from experimental setups to advanced processing software. [View manuscript](#).

**British Higher School of Art and Design (BHSAD) • Moscow, Russia**

**Dec 2011 - Feb 2012**

Three-month intensive in Graphical Design and Visual Communications. Lectures and hands-on experience in graphic design and user interfaces.

## Professional Networks

- Discover my professional contacts [on LinkedIn](#) (200+ connections).
- Find examples of my code [on GitHub](#) (50+ repositories).
- Check out my UI design portfolio [on Dribbble](#) (50+ shots).

## Interests

Linux and open-source software. Hosting an [open-source project](#) aimed at keyboard remapping under Linux (over 250 stars on GitHub).